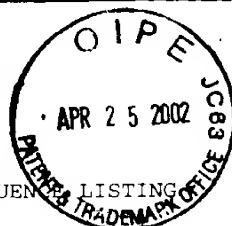SEQUENCE LISTING

<110>   Clark, Abbot F.
        Wordinger, Robert J.

<120>   Methods for Diagnosing Glaucoma and Discovering Anti-Glaucoma Drugs

<130>   1581 US F

<140>   09/308,295
<141>   1999-05-17

<150>   PCT/US97/21054
<151>   1997-11-14

<150>   USSN 60/033,227
<151>   1996-12-05

<160>   4

<170>   PatentIn version 3.1

<210>   1
<211>   3791
<212>   RNA
<213>   homo sapiens

<400>   1

```
uuuuuagaaa aaaaaaauau auuucccucc ugcuccuucu gcguucacaa gcuaaguugu      60

uuaucucggc ugcggcggga acugcggacg guggcgggcg agcggcuccu cugccagagu     120

ugauauucac ugauggacuc caaagaauca uuaacuccug guagagaaga aaaccccagc     180

agugugcuug cucaggagag gggagaugug auggacuucu auaaaacccu aagaggagga     240

gcuacuguga agguuucugc gucuucaccc ucacuggcug ucgcuucuca aucagacucc     300

aagcagcgaa gacuuuuggu ugauuuucca aaaggcucag uaagcaaugc gcagcagcca     360

gaucugucca aagcaguuuc acucucaaug ggacuguaua ugggagagac agaaacaaaa     420

gugaugggaa augaccuggg auucccacag cagggccaaa ucagccuuuc cucgggggaa     480

acagacuuaa agcuuuugga agaaagcauu gcaaaccuca auaggucgac caguguucca     540

gagaacccca agaguucagc auccacugcu gugucugcug cccccacaga gaaggaguuu     600

ccaaaaacuc acucugaugu aucuucagaa cagcaacauu ugaagggcca gacuggcacc     660

aacgguggca augugaaauu guauaccaca gaccaaagca ccuuugacau uuugcaggau     720

uuggaguuuu cuucuggguc cccagguaaa gagacgaaug agaguccuug gagaucagac     780

cuguugauag augaaaacug uuugcuuucu ccucuggcgg gagaagacga uucauuccuu     840

uuggaaggaa acucgaauga ggacugcaag ccucucauuu uaccggacac uaaacccaaa     900

auuaaggaua auggagaucu gguuuuguca agccccagua auguaacacu gccccaagug     960

aaaacagaaa aagaagauuu caucgaacuc ugcaccccug ggguaauuaa gcaagagaaa    1020

cugggcacag uuuacuguca ggcaagcuuu ccuggagcaa auauaauugg uaauaaaaug    1080

ucugccauuu cguucaugg ugugaguacc ucuggaggac agauguacca cuaugacaug    1140
```

```
aauacagcau cccuuucuca acagcaggau cagaagccua uuuuuaaugu cauuccacca   1200
auucccguug guuccgaaaa uuggaauagg ugccaaggau cuggagauga caacuugacu   1260
ucucugggga cucugaacuu cccuggucga acaguuuuuu cuaauggcua uucaagcccc   1320
agcaugagac cagauguaag cucuccucca uccagcuccu caacagcaac aacaggacca   1380
ccucccaaac ucugccuggu gugcucugau gaagcuucag gaugucauua uggagucuua   1440
acuuguggaa gcuguaaagu uuucuucaaa agagcagugg aaggacagca caauuaccua   1500
ugugcuggaa ggaaugauug caucaucgau aaaauucgaa gaaaaaacug cccagcaugc   1560
cgcuaucgaa aaugucuuca ggcuggaaug aaccuggaag cucgaaaaac aaagaaaaaa   1620
auaaaaggaa uucagcaggc cacuacagga gucucacaag aaaccucuga aaauccuggu   1680
aacaaaacaa uaguuccugc aacguuacca caacucaccc cuacccuggu gucacguuug   1740
gagguuauug aaccugaagu guuauaugca ggauaugaua gcucuguucc agacucaacu   1800
uggaggauca ugacuacgcu caacauguua ggagggcggc aagugauugc agcagugaaa   1860
ugggcaaagg caauaccagg uuucaggaac uuacaccugg augaccaaau gacccuacug   1920
caguacuccu ggauguuucu uauggcauuu gcucuggggu ggagaucaua uagacaauca   1980
agugcaaacc ugcuguguuu ugcuccugau cugauuauua augagcagag aaugacucua   2040
cccugcaugu acgaccaaug uaaacacaug cuguauguuu ccucugaguu acacaggcuu   2100
cagguaucuu augaagagua ucucuguaug aaaaccuuac ugcuucucuc uucaguuccu   2160
aaggacgguc ugaagagcca agagcuauuu gaugaaauua gaaugaccua caucaaagag   2220
cuaggaaaag ccauugucaa gagggaagga aacuccagcc agaacuggca gcgguuuuau   2280
caacugacaa aacucuugga uucuaugcau gaaaauguua uggguuaaa accagaaagc    2340
acaucucaca cauuaaucug auuuucaucc caacaaucuu ggcgcucaaa aaauagaacu   2400
caaugagaaa aagaagauua ugugcacuuc guugucaaua auaagucaac ugaugcucau   2460
cgacaacuau aggaggcuuu ucauuaaaug ggaaaagaag cugugcccuu uuaggauacg   2520
uggggggaaaa gaaagucauc uuaauuaugu uuaauugugg auuuaagugc uauauggugg   2580
ugcuguuuga aagcagauuu auuuccuaug uauguguuau cggccaucc caacccaaac    2640
uguugaaguu uguaguaacu ucagugagag uugguuacuc acaacaaauc cugaaaagua   2700
uuuuuagugu uuguagguau ucuguggggau acauacaag cagaacugag gcacuuagga    2760
cauaacacuu uggggguaua uauauccaaa ugccuaaaac uaugggagga aaccuuggcc   2820
accccaaaag gaaaacuaac augauuugug ucuaugaagu gcggauaau uagcauggga    2880
ugagcucugg gcaugccaug aaggaaagcc acgcuccuu cagaauucag aggcagggag    2940
caauuccagu uucaccuaag ucucauaauu uuaguucccu uuuaaaaacc cugaaaacua   3000
caucaccaug gaaugaaaaa uauuguuaua caauacauug aucugucaaa cuuccagaac   3060
caugguagcc uucagugaga uuuccaucuu ggcugguacac ucccugacug uagcuguagg   3120
```

```
ugaauguguu uuugugugug ugugucuggu uuuaguguca gaagggaaau aaaaguguaa    3180

ggaggacacu uuaaacccuu ugggugagu uucguaauuu cccagacuau uuucaagcaa     3240

ccugguccac ccaggauuag ugaccagguu uucaggaaag gauuugcuuc ucucuagaaa    3300

augucugaaa ggauuuuauu uucugaugaa aggcuguaug aaaauacccu ccucaaauaa    3360

cuugcuuaac uacauauaga uucaagugug ucaauauucu auuuuguaua uuaaaugcua    3420

uauaaugggg acaaaucuau auuauacugu guauggcauu auuaagaagc uuuuucauua    3480

uuuuuuauca caguaauuuu aaaaugugua aaaauuaaaa ccagugacuc cuguuuaaaa    3540

auaaaaguug uaguuuuuua uucaugcuga auaauaaucu guaguuaaaa aaaaaguguc    3600

uuuuuaccua cgcagugaaa ugucagacug uaaaaccuug uguggaaaug uuuaacuuuu    3660

auuuuuucau uuaaauuugc uguucuggua uuaccaaacc acacauuugu accgaauugg    3720

caguaaaugu uagccauuua cagcaaugcc aaauauggag aaacaucaua auaaaaaaau    3780

cugcuuuuuu c                                                        3791


<210>   2
<211>   742
<212>   PRT
<213>   homo sapiens

<400>   2

Met Asp Ser Lys Glu Ser Leu Thr Pro Gly Arg Glu Glu Asn Pro Ser
1               5                   10                  15


Ser Val Leu Ala Gln Glu Arg Gly Asp Val Met Asp Phe Tyr Lys Thr
            20                  25                  30


Leu Arg Gly Gly Ala Thr Val Lys Val Ser Ala Ser Ser Pro Ser Leu
            35                  40                  45


Ala Val Ala Ser Gln Ser Asp Ser Lys Gln Arg Arg Leu Leu Val Asp
        50                  55                  60


Phe Pro Lys Gly Ser Val Ser Asn Ala Gln Gln Pro Asp Leu Ser Lys
65                  70                  75                  80


Ala Val Ser Leu Ser Met Gly Leu Tyr Met Gly Glu Thr Glu Thr Lys
                85                  90                  95


Val Met Gly Asn Asp Leu Gly Phe Pro Gln Gln Gly Gln Ile Ser Leu
            100                 105                 110


Ser Ser Gly Glu Thr Asp Leu Lys Leu Leu Glu Glu Ser Ile Ala Asn
            115                 120                 125


Leu Asn Arg Ser Thr Ser Val Pro Glu Asn Pro Lys Ser Ser Ala Ser
    130                 135                 140
```

Page 3

```
Thr Ala Val Ser Ala Ala Pro Thr Glu Lys Glu Phe Pro Lys Thr His
145             150             155             160

Ser Asp Val Ser Ser Glu Gln Gln His Leu Lys Gly Gln Thr Gly Thr
            165             170             175

Asn Gly Gly Asn Val Lys Leu Tyr Thr Thr Asp Gln Ser Thr Phe Asp
        180             185             190

Ile Leu Gln Asp Leu Glu Phe Ser Ser Gly Ser Pro Gly Lys Glu Thr
        195             200             205

Asn Glu Ser Pro Trp Arg Ser Asp Leu Leu Ile Asp Glu Asn Cys Leu
    210             215             220

Leu Ser Pro Leu Ala Gly Glu Asp Asp Ser Phe Leu Leu Glu Gly Asn
225             230             235             240

Ser Asn Glu Asp Cys Lys Pro Leu Ile Leu Pro Asp Thr Lys Pro Lys
            245             250             255

Ile Lys Asp Asn Gly Asp Leu Val Leu Ser Ser Pro Ser Asn Val Thr
        260             265             270

Leu Pro Gln Val Lys Thr Glu Lys Glu Asp Phe Ile Glu Leu Cys Thr
        275             280             285

Pro Gly Val Ile Lys Gln Glu Lys Leu Gly Thr Val Tyr Cys Gln Ala
    290             295             300

Ser Phe Pro Gly Ala Asn Ile Ile Gly Asn Lys Met Ser Ala Ile Ser
305             310             315             320

Val His Gly Val Ser Thr Ser Gly Gly Gln Met Tyr His Tyr Asp Met
            325             330             335

Asn Thr Ala Ser Leu Ser Gln Gln Gln Asp Gln Lys Pro Ile Phe Asn
        340             345             350

Val Ile Pro Pro Ile Pro Val Gly Ser Glu Asn Trp Asn Arg Cys Gln
        355             360             365

Gly Ser Gly Asp Asp Asn Leu Thr Ser Leu Gly Thr Leu Asn Phe Pro
    370             375             380

Gly Arg Thr Val Phe Ser Asn Gly Tyr Ser Ser Pro Ser Met Arg Pro
385             390             395             400
```

```
Asp Val Ser Ser Pro Pro Ser Ser Ser Ser Thr Ala Thr Thr Gly Pro
            405         410                     415

Pro Pro Lys Leu Cys Leu Val Cys Ser Asp Glu Ala Ser Gly Cys His
            420             425                 430

Tyr Gly Val Leu Thr Cys Gly Ser Cys Lys Val Phe Phe Lys Arg Ala
            435             440             445

Val Glu Gly Gln His Asn Tyr Leu Cys Ala Gly Arg Asn Asp Cys Ile
    450             455                 460

Ile Asp Lys Ile Arg Arg Lys Asn Cys Pro Ala Cys Arg Tyr Arg Lys
465             470             475                     480

Cys Leu Gln Ala Gly Met Asn Leu Glu Ala Arg Lys Thr Lys Lys Lys
            485             490                 495

Ile Lys Gly Ile Gln Gln Ala Thr Thr Gly Val Ser Gln Glu Thr Ser
            500             505             510

Glu Asn Pro Gly Asn Lys Thr Ile Val Pro Ala Thr Leu Pro Gln Leu
            515             520             525

Thr Pro Thr Leu Val Ser Leu Leu Glu Val Ile Glu Pro Glu Val Leu
    530             535             540

Tyr Ala Gly Tyr Asp Ser Ser Val Pro Asp Ser Thr Trp Arg Ile Met
545             550             555                     560

Thr Thr Leu Asn Met Leu Gly Gly Arg Gln Val Ile Ala Ala Val Lys
            565             570             575

Trp Ala Lys Ala Ile Pro Gly Phe Arg Asn Leu His Leu Asp Asp Gln
            580             585             590

Met Thr Leu Leu Gln Tyr Ser Trp Met Phe Leu Met Ala Phe Ala Leu
    595             600             605

Gly Trp Arg Ser Tyr Arg Gln Ser Ser Ala Asn Leu Leu Cys Phe Ala
    610             615             620

Pro Asp Leu Ile Ile Asn Glu Gln Arg Met Thr Leu Pro Cys Met Tyr
625             630             635                     640

Asp Gln Cys Lys His Met Leu Tyr Val Ser Ser Glu Leu His Arg Leu
            645             650             655

Gln Val Ser Tyr Glu Glu Tyr Leu Cys Met Lys Thr Leu Leu Leu Leu
            660             665             670
```

Ser Ser Val Pro Lys Asp Gly Leu Lys Ser Gln Glu Leu Phe Asp Glu
        675   680   685

Ile Arg Met Thr Tyr Ile Lys Glu Leu Gly Lys Ala Ile Val Lys Arg
        690   695   700

Glu Gly Asn Ser Ser Gln Asn Trp Gln Arg Phe Tyr Gln Leu Thr Lys
705   710   715   720

Leu Leu Asp Ser Met His Glu Asn Val Met Trp Leu Lys Pro Glu Ser
                725   730   735

Thr Ser His Thr Leu Ile
                740

<210> 3
<211> 4788
<212> RNA
<213> homo sapiens

<400> 3
uuuuuagaaa aaaaaaauau auuucccucc ugcuccuucu gcguucacaa gcuaaguugu   60

uuaucucggc ugcggcggga acugcggacg guggcgggcg agcggcuccu cugccagagu   120

ugauauucac ugauggacuc caaagaauca uuaacuccug guagagaaga aaaccccagc   180

agugugcuug cucaggagag gggagaugug auggacuucu auaaaacccu aagaggagga   240

gcuacuguga agguuucugc gucuucaccc ucacuggcug ucgcuucuca aucagacucc   300

aagcagcgaa gacuuuuggu ugauuuucca aaaggcucag uaagcaaugc gcagcagcca   360

gaucugucca aagcaguuuc acucucaaug ggacuguaua ugggagagac agaaacaaaa   420

gugaugggaa augaccuggg auucccacag cagggccaaa ucagccuuuc ucgggggaa   480

acagacuuaa agcuuuugga agaaagcauu gcaaaccuca auaggucgac caguguucca   540

gagaacccca agaguucagc auccacugcu ugucugcug ccccacagaa gaaggaguuu   600

ccaaaaacuc acucugaugu aucuucagaa cagcaacauu ugaagggcca gacuggcacc   660

aacgguggca augugaaauu guauaccaca gaccaaagca ccuuugacau uuugcaggau   720

uuggaguuuu cuucuggguc cccagguaaa gagacgaaug agaguccuug gagaucagac   780

cuguugauag augaaaacug uuugcuuucu ccucuggcgg agaagacga uucauuccuu   840

uuggaaggaa acucgaauga ggacugcaag ccucucauuu uaccggacac uaaacccaaa   900

auuaaggaua auggagaucu gguuuugucaa gccccaguaa auguaacacu gccccaagug   960

aaaacagaaa aagaagauuu caucgaacuc ugcacccug ggguaauuaa gcaagagaaa   1020

cugggcacag uuuacugca ggcaagcuuu ccuggagcaa auauaauugg uaauaaaaug   1080

ucugccauuu cuguucaugg ugugaguacc ucuggaggac agauguacca cuaugacaug   1140

Page 6

```
aauacagcau cccuuucuca acagcaggau cagaagccua uuuuuaaugu cauuccacca      1200

auucccguug guuccgaaaa uuggaauagg ugccaaggau cuggagauga caacuugacu      1260

ucucugggga cucugaacuu cccuggucga acaguuuuuu cuaauggcua uucaagcccc      1320

agcaugagac cagauguaag cucuccucca uccagcuccu caacagcaac aacaggacca      1380

ccucccaaac ucugccuggu gugcucugau gaagcuucag gaugucauua uggagucuua      1440

acuuguggaa gcuguaaagu uuucuucaaa agagcagugg aaggacagca caauuaccua      1500

ugugcuggaa ggaaugauug caucaucgau aaaauucgaa gaaaaaacug cccagcaugc      1560

cgcuaucgaa aaugucuuca ggcuggaaug aaccuggaag cucgaaaaac aaagaaaaaa      1620

auaaaaggaa uucagcaggc cacuacagga gucucacaag aaaccucuga aaauccuggu      1680

aacaaaacaa uaguuccugc aacguuacca caacucaccc cuacccuggu gucacuguug      1740

gagguuauug aaccugaagu guuauaugca ggauaugaua gcucuguucc agacucaacu      1800

uggaggauca ugacuacgcu caacauguua ggagggcggc aagugauugc agcagugaaa      1860

ugggcaaagg caauaccagg uuucaggaac uuacaccugg augaccaaau gacccuacug      1920

caguacuccu ggauguuucu uauggcauuu gcucuggggu ggagaucaua uagacaauca      1980

agugcaaacc ugcuguguuu ugcuccugau cugauuauua augagcagag aaugacucua      2040

cccugcaugu acgaccaaug uaaacacaug cuguauguuu ccucugaguu acacaggcuu      2100

cagguaucuu augaagagua ucucuguaug aaaaccuuac ugcuucucuc uucaguuccu      2160

aaggacgguc ugaagagcca agagcuauuu gaugaaauua gaaugaccua caucaaagag      2220

cuaggaaaag ccauugucaa gagggaagga aacuccagcc agaacuggca gcgguuuuau      2280

caacugacaa aacucuugga uucuaugcau gaagugguug aaaaucuccu uaacuauugc      2340

uuccaaacau uuuuggauaa gaccaugagu auugaauucc ccgagauguu agcugaaauc      2400

aucaccaauc agauaccaaa auauucaaau ggaaauauca aaaaacuucu guuucaucaa      2460

aagugacugc cuuaauaaga augguugccu uaaagaaagu cgaauuaaua gcuuuuauug      2520

uauaaacuau caguuugucc uguagagguu uuguuguuuu auuuuuuauu guuucaucu      2580

guuguuuugu uuuaaauacg cacuacaugu gguuuauaga gggccaagac uuggcaacag      2640

aagcaguuga gucgucauca cuuucagug auggagagu agauggugaa auuuauuagu      2700

uaauauaucc cagaaauuag aaaccuuaau auguggacgu aaucuccaca gucaaagaag      2760

gauggcaccu aaaccaccag ugcccaaagu cugugugaug aacuuucucu ucauacuuuu      2820

uuucacaguu ggcuggauga aauuuucuag acuuucuguu ggguauccc ccccuguau      2880

aguuaggaua gcauuuuuga uuuaugcaug gaaaccugaa aaaaguuuua caaguguaua      2940

ucagaaaagg gaaguugugc cuuuuauagc uauuacuguc ugguuuuaac aauuuccuuu      3000

auauuuagug aacuacgcuu gcucauuuuu ucuuacauaa uuuuuuauuc aaguuauugu      3060

acagcuguuu aagaugggca gcuaguucgu agcuuuccca aauaaacucu aaacauuaau      3120
```

Page 7

```
caaucaucug ugugaaaaug gguuggugcu ucuaaccuga uggcacuuag cuaucagaag    3180

accacaaaaa uugacucaaa ucuccaguau ucuugucaaa aaaaaaaaaa aaaaagcuca    3240

uauuuuguau auaucugcuu caguggagaa uuauauaggu ugugcaaauu aacaguccua    3300

acugguauag agcaccaguu ccagugaccu gcuggguaaa cuguggauga ugguugcaaa    3360

agacuaauuu aaaaaauaac uaccaagagg cccugucugu accaacgccu cuauuuuugc    3420

aauggcuaua uggcaagaaa gcugguaaac uauuugucuu ucaggaccuu ugaaguagu    3480

uuguauaacu ucuuaaaagu ugugauucca gauaaccagc uguaacacag cugagagacu    3540

uuuaaucaga caaaguaauu ccucucacua aacuuuaccc aaaaacuaaa ucucuaauau    3600

ggcaaaaaug gcuagacacc cauuuucaca uucccaucug ucaccaauug guuaaucuuu    3660

ccugauggua caggaaagcu cagcuacuga uuuuugugau uuagaacugu augucagaca    3720

uccauguuug uaaaacuaca caucccuaau gugugccaua gaguuuaaca caaguccugu    3780

gaauuucuuc acguugaaa auuauuuuaa acaaaauaga agcuguagua gcccuuucug    3840

ugugcaccuu accaacuuuc uguaaacuca aaacuuaaca uauuuacuaa gccacaagaa    3900

auuugauuuc uauucaaggu ggccaaauua uuugguguaau agaaaacuga aaaucuaaua    3960

uuaaaaauau ggaacuucua auauauuuuu auauuuaguu uaguuucag auauauauca    4020

uauugguauu cacuaaucug ggaagggaag ggcuacugca gcuuuacaug caauuuauua    4080

aaaugauugu aaaauagcuu guauagugua aaauaagaau gauuuuuaga ugagauuguu    4140

uuaucaugac auguuauaua uuuuuuguag gggucaaaga aaugcugaug gauaaccuau    4200

augauuuaua guuuguacau gcauucauac aggcagcgau ggucucagaa accaaacagu    4260

uugcucuagg ggaagaggga gauggagacu gguccugugu gcagugaagg uugcugaggc    4320

ucugacccag ugagauuaca gaggaaguua uccucugccu cccauucuga ccacccuucu    4380

cauuccaaca gugagucugu cagcgcaggu uuaguuuacu caaucucccc uugcacuaaa    4440

guauguaaag uauguaaaca ggagacagga agguggugcu uacauccuua aaggcaccau    4500

cuaauagcgg guuacuuuca cauacagccc uccccagca guugaaugac aacagaagcu    4560

ucagaaguuu ggcaauaguu ugcauagagg uaccagcaau auguaaauag ugcagaaucu    4620

cauagguugc caauaauaca cuaauuccuu ucuauccuac aacaagaguu uauuuccaaa    4680

uaaaaugagg acauguuuuu guuuucuuug aaugcuuuuu gaauguuauu uguuauuuuc    4740

aguauuuugg agaaauuauu uaauaaaaaa acaaucauuu gcuuuuug            4788
```

```
<210>  4
<211>  777
<212>  PRT
<213>  homo sapiens

<400>  4

Met Asp Ser Lys Glu Ser Leu Thr Pro Gly Arg Glu Glu Asn Pro Ser
1               5               10              15
```

Ser Val Leu Ala Gln Glu Arg Gly Asp Val Met Asp Phe Tyr Lys Thr
        20   25   30

Leu Arg Gly Gly Ala Thr Val Lys Val Ser Ala Ser Ser Pro Ser Leu
        35   40   45

Ala Val Ala Ser Gln Ser Asp Ser Lys Gln Arg Arg Leu Leu Val Asp
50   55   60

Phe Pro Lys Gly Ser Val Ser Asn Ala Gln Gln Pro Asp Leu Ser Lys
65   70   75   80

Ala Val Ser Leu Ser Met Gly Leu Tyr Met Gly Glu Thr Glu Thr Lys
        85   90   95

Val Met Gly Asn Asp Leu Gly Phe Pro Gln Gln Gly Gln Ile Ser Leu
        100   105   110

Ser Ser Gly Glu Thr Asp Leu Lys Leu Leu Glu Glu Ser Ile Ala Asn
        115   120   125

Leu Asn Arg Ser Thr Ser Val Pro Glu Asn Pro Lys Ser Ser Ala Ser
        130   135   140

Thr Ala Val Ser Ala Ala Pro Thr Glu Lys Glu Phe Pro Lys Thr His
145   150   155   160

Ser Asp Val Ser Ser Glu Gln Gln His Leu Lys Gly Gln Thr Gly Thr
        165   170   175

Asn Gly Gly Asn Val Lys Leu Tyr Thr Thr Asp Gln Ser Thr Phe Asp
        180   185   190

Ile Leu Gln Asp Leu Glu Phe Ser Ser Gly Ser Pro Gly Lys Glu Thr
        195   200   205

Asn Glu Ser Pro Trp Arg Ser Asp Leu Leu Ile Asp Glu Asn Cys Leu
        210   215   220

Leu Ser Pro Leu Ala Gly Glu Asp Asp Ser Phe Leu Leu Glu Gly Asn
225   230   235   240

Ser Asn Glu Asp Cys Lys Pro Leu Ile Leu Pro Asp Thr Lys Pro Lys
        245   250   255

Ile Lys Asp Asn Gly Asp Leu Val Leu Ser Ser Pro Ser Asn Val Thr
        260   265   270

Leu Pro Gln Val Lys Thr Glu Lys Glu Asp Phe Ile Glu Leu Cys Thr
        275   280   285

Pro Gly Val Ile Lys Gln Glu Lys Leu Gly Thr Val Tyr Cys Gln Ala
        290   295   300

Ser Phe Pro Gly Ala Asn Ile Ile Gly Asn Lys Met Ser Ala Ile Ser
305   310   315   320

Val His Gly Val Ser Thr Ser Gly Gly Gln Met Tyr His Tyr Asp Met
        325   330   335

Asn Thr Ala Ser Leu Ser Gln Gln Gln Asp Gln Lys Pro Ile Phe Asn
        340   345   350

Val Ile Pro Pro Ile Pro Val Gly Ser Glu Asn Trp Asn Arg Cys Gln
        355   360   365

Gly Ser Gly Asp Asp Asn Leu Thr Ser Leu Gly Thr Leu Asn Phe Pro
370   375   380

Gly Arg Thr Val Phe Ser Asn Gly Tyr Ser Ser Pro Ser Met Arg Pro
385   390   395   400

Asp Val Ser Ser Pro Pro Ser Ser Ser Thr Ala Thr Thr Gly Pro
        405   410   415

Pro Pro Lys Leu Cys Leu Val Cys Ser Asp Glu Ala Ser Gly Cys His
        420   425   430

Tyr Gly Val Leu Thr Cys Gly Ser Cys Lys Val Phe Phe Lys Arg Ala
        435   440   445

Val Glu Gly Gln His Asn Tyr Leu Cys Ala Gly Arg Asn Asp Cys Ile
        450   455   460

Ile Asp Lys Ile Arg Arg Lys Asn Cys Pro Ala Cys Arg Tyr Arg Lys
465   470   475   480

Cys Leu Gln Ala Gly Met Asn Leu Glu Ala Arg Lys Thr Lys Lys Lys
        485   490   495

Ile Lys Gly Ile Gln Gln Ala Thr Thr Gly Val Ser Gln Glu Thr Ser
        500   505   510

Glu Asn Pro Gly Asn Lys Thr Ile Val Pro Ala Thr Leu Pro Gln Leu
        515   520   525

Thr Pro Thr Leu Val Ser Leu Leu Glu Val Ile Glu Pro Glu Val Leu
        530   535   540

Page 10

Tyr Ala Gly Tyr Asp Ser Ser Val Pro Asp Ser Thr Trp Arg Ile Met
545   550   555   560

Thr Thr Leu Asn Met Leu Gly Gly Arg Gln Val Ile Ala Ala Val Lys
            565   570   575

Trp Ala Lys Ala Ile Pro Gly Phe Arg Asn Leu His Leu Asp Asp Gln
            580   585   590

Met Thr Leu Leu Gln Tyr Ser Trp Met Phe Leu Met Ala Phe Ala Leu
            595   600   605

Gly Trp Arg Ser Tyr Arg Gln Ser Ser Ala Asn Leu Leu Cys Phe Ala
    610   615   620

Pro Asp Leu Ile Ile Asn Glu Gln Arg Met Thr Leu Pro Cys Met Tyr
625   630   635   640

Asp Gln Cys Lys His Met Leu Tyr Val Ser Ser Glu Leu His Arg Leu
            645   650   655

Gln Val Ser Tyr Glu Glu Tyr Leu Cys Met Lys Thr Leu Leu Leu Leu
            660   665   670

Ser Ser Val Pro Lys Asp Gly Leu Lys Ser Gln Glu Leu Phe Asp Glu
            675   680   685

Ile Arg Met Thr Tyr Ile Lys Glu Leu Gly Lys Ala Ile Val Lys Arg
    690   695   700

Glu Gly Asn Ser Ser Gln Asn Trp Gln Arg Phe Tyr Gln Leu Thr Lys
705   710   715   720

Leu Leu Asp Ser Met His Glu Val Val Glu Asn Leu Leu Asn Tyr Cys
            725   730   735

Phe Gln Thr Phe Leu Asp Lys Thr Met Ser Ile Glu Phe Pro Glu Met
            740   745   750

Leu Ala Glu Ile Ile Thr Asn Gln Ile Pro Lys Tyr Ser Asn Gly Asn
            755   760   765

Ile Lys Lys Leu Leu Phe His Gln Lys
    770   775